



Drainage Update – April 18, 2023

Jon McCraw
City Manager

Nancy Depreo
Mayor

Gerard Maher
Councilmember At-Large

Shane Finley
Ward 1 Councilmember

Anna Liese
Ward 2 Councilmember

John Cumberland
Ward 3 Councilmember

Charles "Chuck" Clark
Ward 4 Councilmember

PREVIOUS STEPS TAKEN / COMPLETED DRAINAGE PROJECTS

- Diamondhead Drive West Drainage
- Turnberry Drainage Weir Improvements
- Amoka Place/Ieke
- Duck Pond Culvert Replacement
- Ieke Drive Drainage
- Kome Drive Drainage Project
- Drainage Project Live Oak Phase II
- Culvert Replacement Airport Drive
- Kiko / Iona Street Drainage
- Kapalama Street
- Bayou Drive Culvert Replacement
- City Hall Drainage Improvements
- Bamboo Drainage

ACTION PLAN -- 2021

- **Hydraulic Analysis** for the entire City – Basin A & C are complete
- **Stormwater Management** - modifications of existing stormwater practice, additional enforcement and penalties, implementing land development policies and regulations that align community growth and development with stormwater management goals
- **Floodplain Management** - flood risk reduction goals, ordinance requirements, codes - National Flood Insurance Program's Community Rating System.
- **Land Use Planning** - networks of natural landscapes and low impact developments can lower the amount of runoff and thus reduce dependence on built infrastructure to manage stormwater. Emphasize the protection and restoration of coastal wetland landscapes, which absorb excess water, can provide flood protection benefits.
- **Public Works** - Public works personnel are critical to the operation and maintenance of key components of the stormwater management system. Public works personnel construct and maintain stormwater system. They are in a good position to observe asset performance and identify repairs that are needed. Report to City Engineer to provide a solution.
- **Identify and Prioritize Drainage Projects** – Prioritize projects and seek funding - match the right funding with the right project. Have a realistic plan that our Federal and State Officials understand to assist with funding. Get moving and don't stop until all projects have been funded. 16.6 million in projects have been identified through the following
 - Waggoner Report
 - Watershed A Study
 - Observed Drainage Issues

STEPS TAKEN BY CITY

- City Engineer
- Net fill policy
- Landscape culvert moratorium
- Maintenance - Cleaning ditches and checking outfall ditches
- Paradise Bayou Acquisition
- Increased Building Department Staff
- Purchased land to use as green space and detention
- Subdivision Regulations Ordinance Approved by council
- Participated in the Hancock County Watershed-Based Stormwater Assessment & Management Plan in 2015 to identify drainage problem areas in the city
- Rotten Bayou Watershed

STEPS TAKEN BY CITY

- Watershed A Drainage Study - completed
- Disaster Management Firm - Rostan Solutions consultant for hazardous mitigation funding
- National Flood Insurance Program's Community Rating System CRS – Rostan Solutions

RECENTLY COMPLETED \$1.1 MILLION IN DRAINAGE PROJECTS

| Description | Total Cost | Funding Source |
|--------------------------------------|------------|----------------|
| Diamondhead Drive East Drainage | 360,000 | Local Funds |
| Hilo Street Culvert Replacement | 226,000 | Local Funds |
| Alkii Way Bank Stabilization Project | 440,000 | NRCS Grant |
| Hilo Way Drainage | 116,000 | Local ARPA |
| Iona Street Study | 15,000 | Local Funds |

CURRENT DRAINAGE PROJECTS

\$3.9 MILLION IN PROJECTS

| Site # | Description | Engineering Firm | Est. Cost | Funding Source | Status |
|--------|-------------------------|------------------|------------|----------------|-----------------|
| COD-4 | Makiki Drive | Pickering | 201,545.00 | Local Funds | In Progress |
| 3.24 | I -10 Pond | Pickering | 310,000.00 | GOMESA FY21 | In Progress |
| 5.09 | Lily Pond | Pickering | 310,000.00 | GOMESA FY21 | In Progress |
| 3.10 | Coon Branch | Chiniche | 462,199.00 | GOMESA FY22 | Design Phase |
| 3.11 | Koloa Steet @ Ala Moana | Chiniche | 422,921.00 | GOMESA FY22 | Design Phase |
| 3.12 | Lots 7 & 8 | Chiniche | 308,326.50 | GOMESA FY22 | Design Phase |
| 3.08 | Anahola | Chiniche | 777,187.00 | GOMESA FY23 | Funding Secured |
| 3.13 | Fairway Drive | Covington | 256,131.00 | GOMESA FY23 | Funding Secured |
| 3.15 | Kome Drive | Covington | 844,240.00 | GOMESA FY23 | Funding Secured |

PROPOSED DRAINAGE PROJECTS

\$4 MILLION ARPA GRANT APPLIED

| Site # | Description | Est. Cost | Funding Source |
|-------------|----------------------------|------------|------------------|
| 3.09 | Ahuli | 651,438.00 | Local/State ARPA |
| 3.05 | Aukai Place/DH Dr East | 184,970.00 | Local/State ARPA |
| 3.06 | Hilo Way to Hapuna Place | 215,759.00 | Local/State ARPA |
| 3.22 | Hilo Way -- West | 137,681.00 | Local/State ARPA |
| 3.23 | Hilo Way at Koko Street | 163,542.00 | Local/State ARPA |
| 3.17/CIP 1 | Turnberry | 315,446.25 | Local/State ARPA |
| COD-3 | Kolo Court | 240,657.50 | Local/State ARPA |
| COD-8/CIP 2 | Kaleki Way | 647,320.63 | Local/State ARPA |
| COD-9/CIP 3 | Kalae Street | 120,789.00 | Local/State ARPA |
| 3.14 | Alakoko Drive | 255,030.00 | Local/State ARPA |
| 3.16 | DH Drive West/ Bayou Drive | 112,692.00 | Local/State ARPA |
| COD-5 | DH Drive East/Kalani | 142,992.25 | Local/State ARPA |
| COD-6 | Bayou Drive | 555,751.15 | Local/State ARPA |
| | Beau Vue 2 | 237,113.00 | Local/State ARPA |

PROPOSED DRAINAGE PROJECTS

\$7.6 MILLION

| Site # | Description | Est. Cost | Funding Source |
|--------|---------------------|-----------|--------------------|
| 3.18 | Paradise Bayou Area | 4,468,640 | Grant with State |
| CIP 4 | Bank Stabilization | 3,104,725 | Local/County Funds |

TOTAL DRAINAGE PROJECTS \$16.6 MILLION

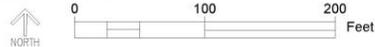
- COMPLETED 1.1 MILLION
- FUNDED 3.9 MILLION
- GRANT APPLIED 4.0 MILLION
- LOCAL/STATE FUNDS 7.6 MILLION

Capital Improvement Projects

- CIP-1 TURNBERRY IMPROVEMENTS
- CIP-2 KALEKI IMPROVEMENTS
- CIP-3 KALAE IMPROVEMENTS
- CIP-4 BANK STABILIZATION IMPROVEMENTS



TURNBERRY IMPROVEMENTS
 SCALE: 1" = 50'



INCREASE DITCH BOTTOM WIDTH,
 TRIANGULAR CROSS SECTION
 WITH STABLE SIDE SLOPES

7426 TURNBERRY WAY
 FINISHED FLOOR
 ELEVATION = 26.70'

REMOVE 36" RCP AND
 REPLACE WITH 48" RCP
 LOWER ROAD PROFILE TO
 ELEVATION 25' FOR
 APPROX. 50 FEET

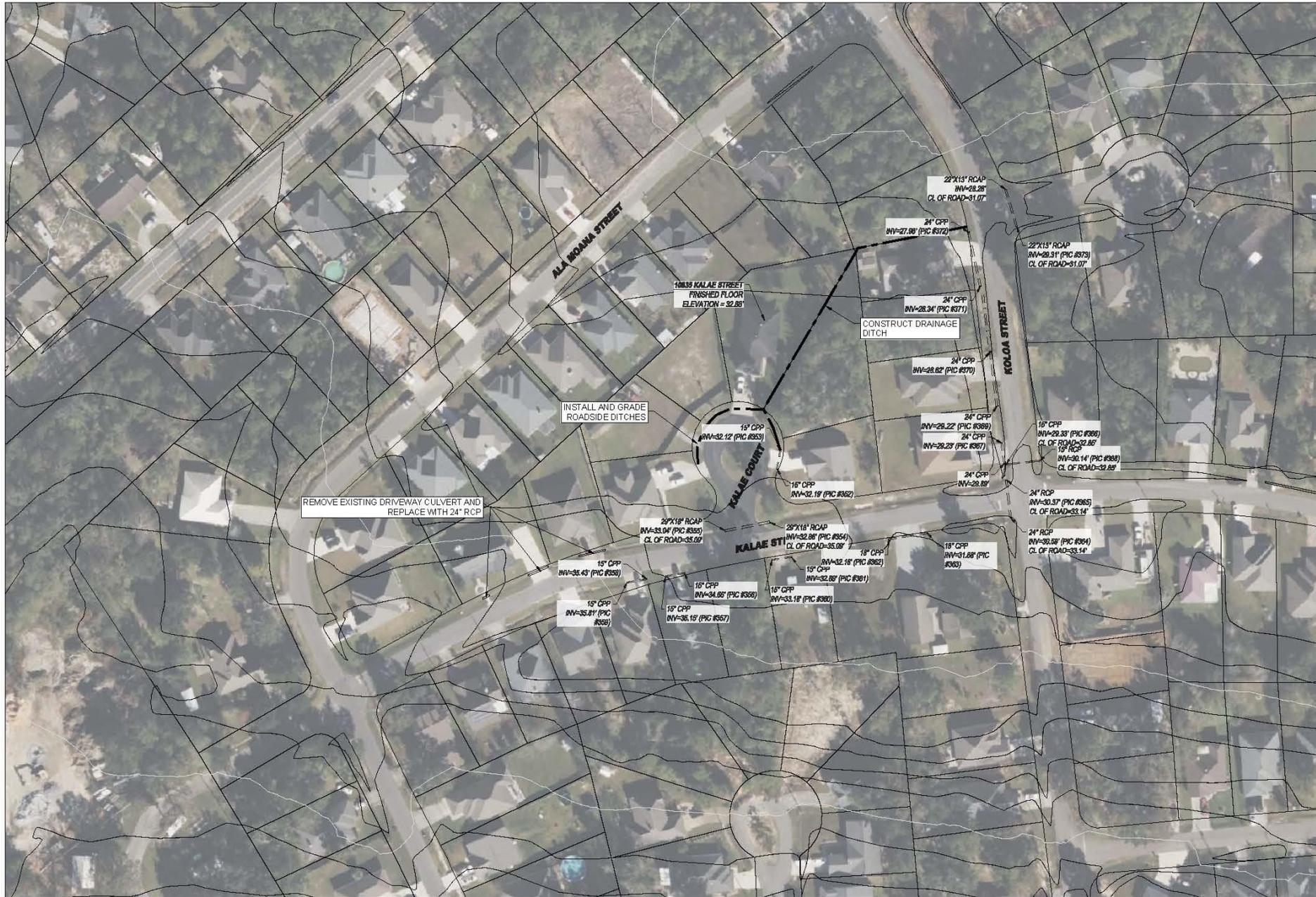
CONDUCT HYDROGRAPHIC
 SURVEY AND REMOVE
 EXCESS SEDIMENT

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**CAPITAL IMPROVEMENTS PROJECT
 STORMWATER MASTER PLAN**
 CITY OF DIAMONDHEAD

TURNBERRY DRIVE

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|------------------------|---------------|
| DATE: 03/01/23 | SHEET NUMBER: |
| SCALE: AS NOTED | CIP-1 |
| DRAWN BY: SM | |
| CHECKED BY: AL | |
| PROJECT: 1916175 WA 12 | |



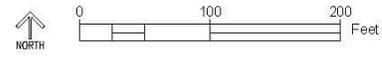
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**CAPITAL IMPROVEMENTS PROJECT
 STORMWATER MASTER PLAN**

CITY OF DIAMONDHEAD

KALAE IMPROVEMENTS
 SCALE: 1" = 50'



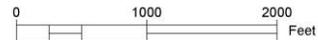


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CAPITAL IMPROVEMENTS PROJECT
 STORMWATER MASTER PLAN
 CITY OF DIAMONDHEAD

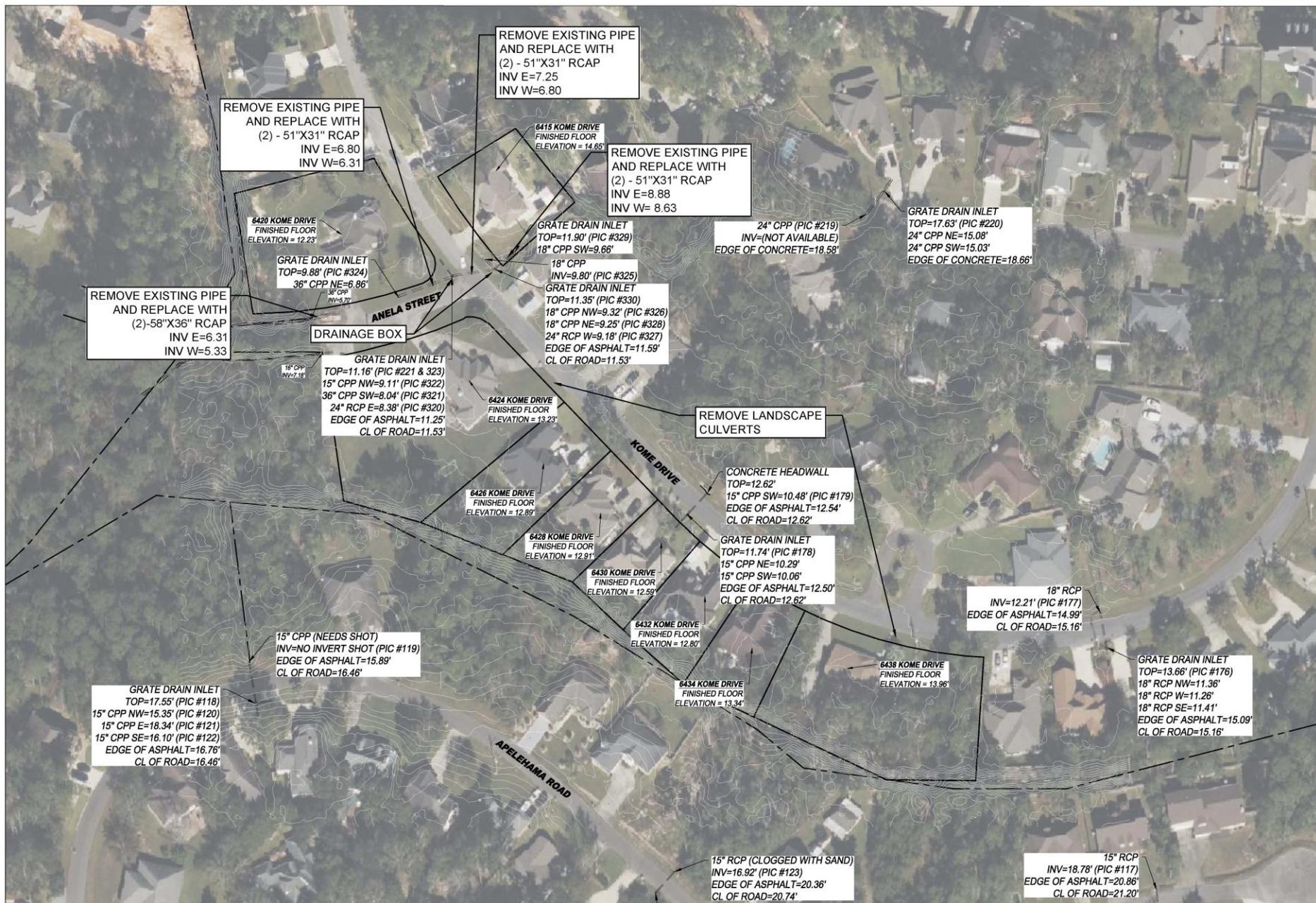
BANK STABILIZATION IMPROVEMENTS
 SCALE: 1" = 500'



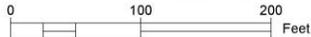
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| DATE | 03/01/23 | SHEET NUMBER | |
| SCALE | AS NOTED | PROJECT | CIP-4 |
| DRAWN BY | SM | PROJECT NO. | MS16175 WA 12 |
| CHECKED BY | AL | | |

Public Works Projects

- PW-1 KOME DRIVE
- PW-2 APELEHAMA ROAD
- PW-3 ALAKOKO DRIVE
- PW-4 DIAMONDHEAD DRIVE EAST
- PW-5 MOANALUA WAY
- PW-6 DIAMONDHEAD DR E & ANAHOLA PLACE
- PW-7 DIAMONDHEAD DR WEST
- PW-8 KAPALAMA DRIVE
- PW-9 CROOKED STICK DRIVE



KOME DRIVE
 SCALE: 1" = 50'



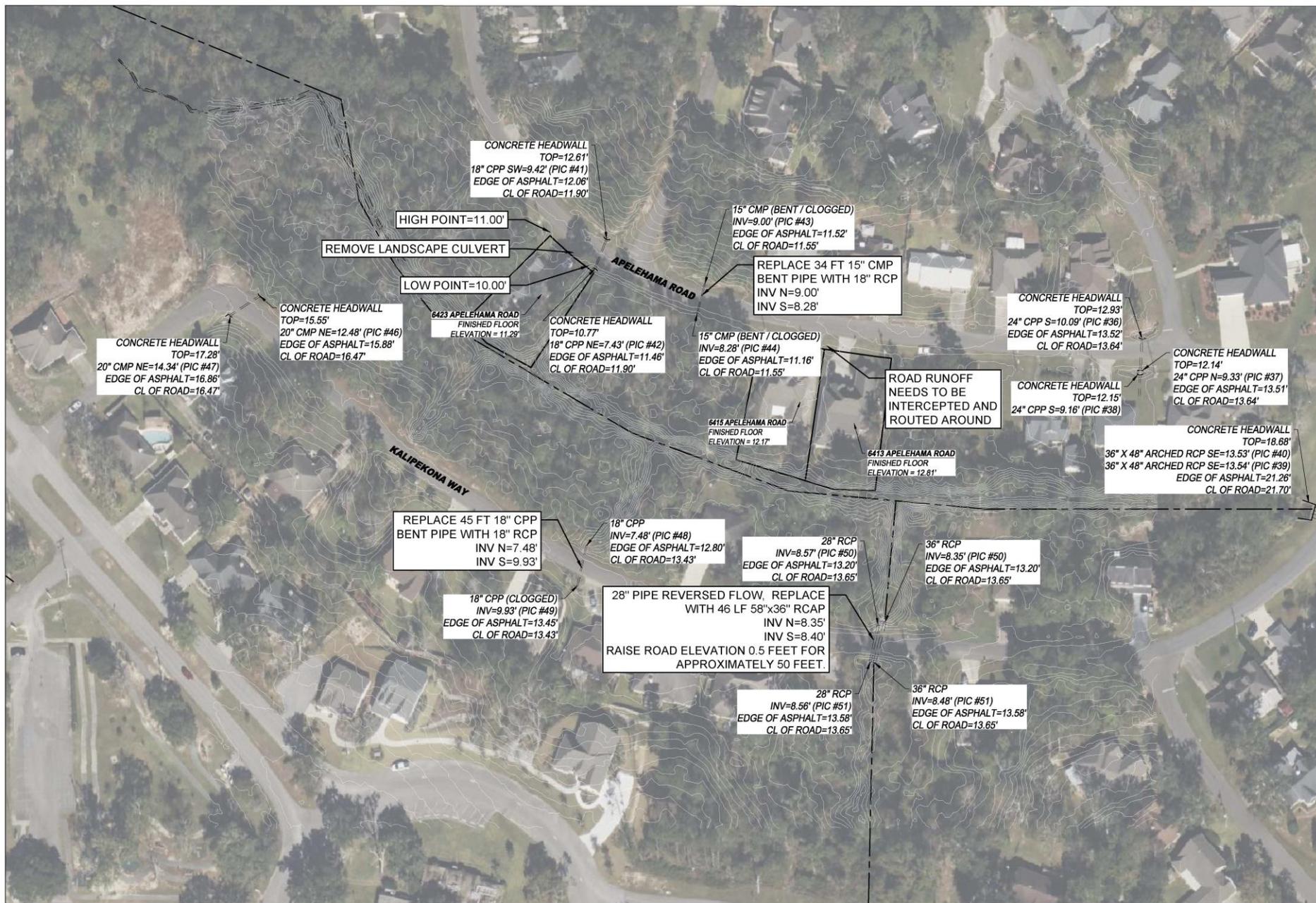
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**PUBLIC WORKS PROJECTS
 STORMWATER MASTER PLAN**
 CITY OF DIAMONDHEAD

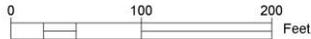
KOME DRIVE

DATE: 3/01/23 SHEET NUMBER:
 SCALE: PW-1
 DRAWN BY: SM BY: AL
 PROJECT: 16175



APELEHAMA ROAD

SCALE: 1" = 50'



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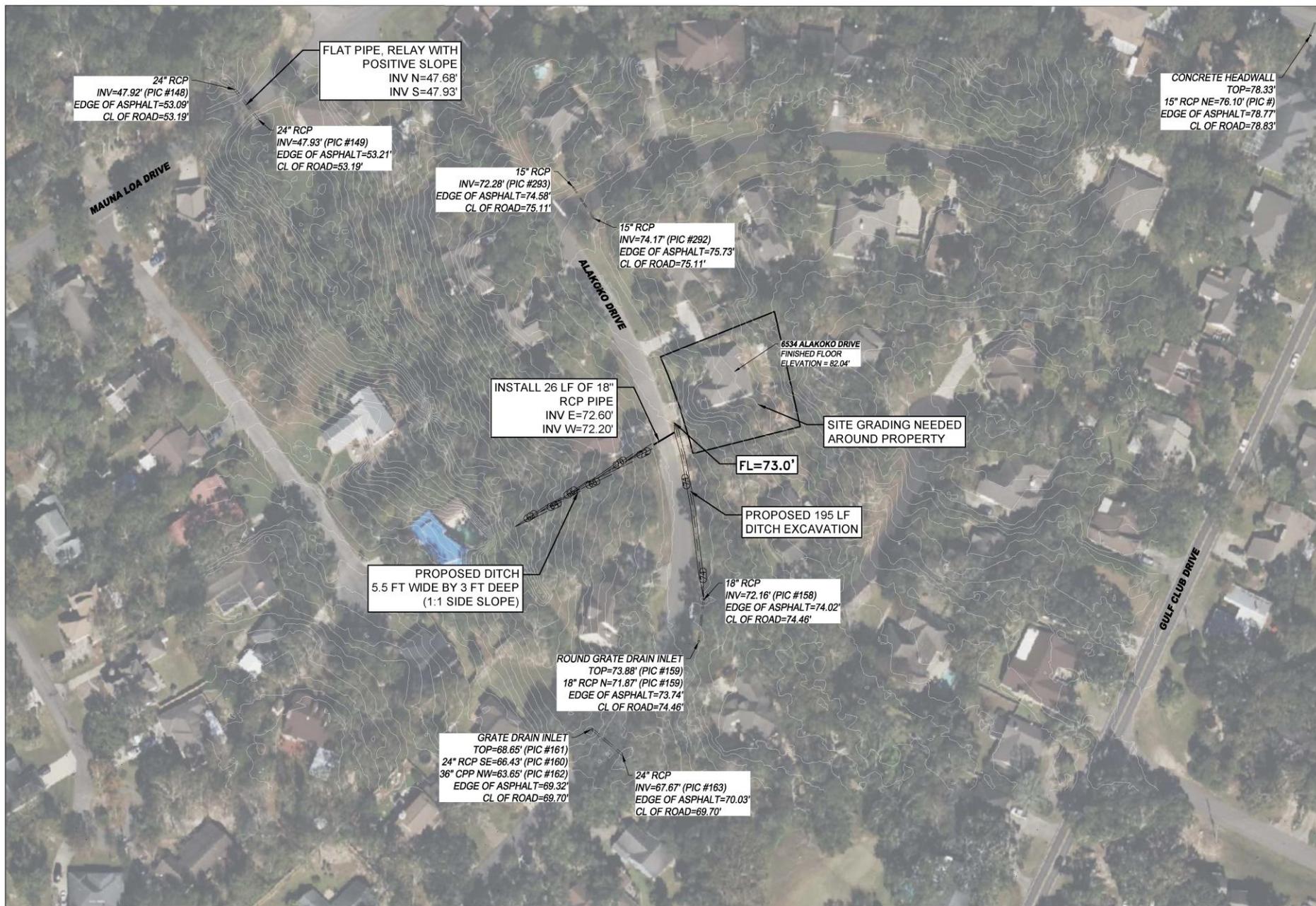
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 STORMWATER MASTER PLAN**

CITY OF DIAMONDHEAD

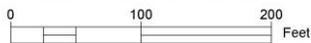
APELEHAMA ROAD

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| DATE | 3/01/23 | SHEET NUMBER |
| SCALE | 1" = 50' | |
| DRAWN BY | SM | PROJECT |
| CHECKED BY | AL | 16175 |

PW-2



ALAKOKO DRIVE
 SCALE: 1" = 50'



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PUBLIC WORKS PROJECTS
STORMWATER MASTER PLAN
 CITY OF DIAMONDHEAD

ALAKOKO DRIVE

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| SCALE | | | |
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PW-3



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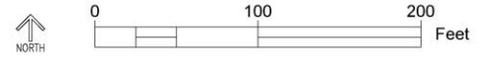
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**PUBLIC WORKS PROJECTS
 STORMWATER MASTER PLAN**

CITY OF DIAMONDHEAD

DIAMONDHEAD DRIVE EAST

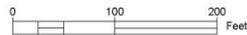
DIAMONDHEAD DRIVE EAST
 SCALE: 1" = 40'



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| DATE: 3/01/23 | SHEET NUMBER: PW-4 |
| SCALE: 1" = 40' | |
| DRAWN BY: SM | CHECKED BY: AL |
| PROJECT: 16175 | |



MOANALUA WAY
 SCALE: 1" = 50'



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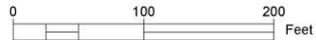
PUBLIC WORKS PROJECTS
STORMWATER MASTER PLAN
 CITY OF DIAMONDHEAD

MOANALUA WAY
 DATE: 3/01/23 SHEET NUMBER: PW-5
 SCALE: BY SM DRAWN BY AL PROJECT: 16175



DIAMONDHEAD DR WEST

SCALE: 1" = 50'



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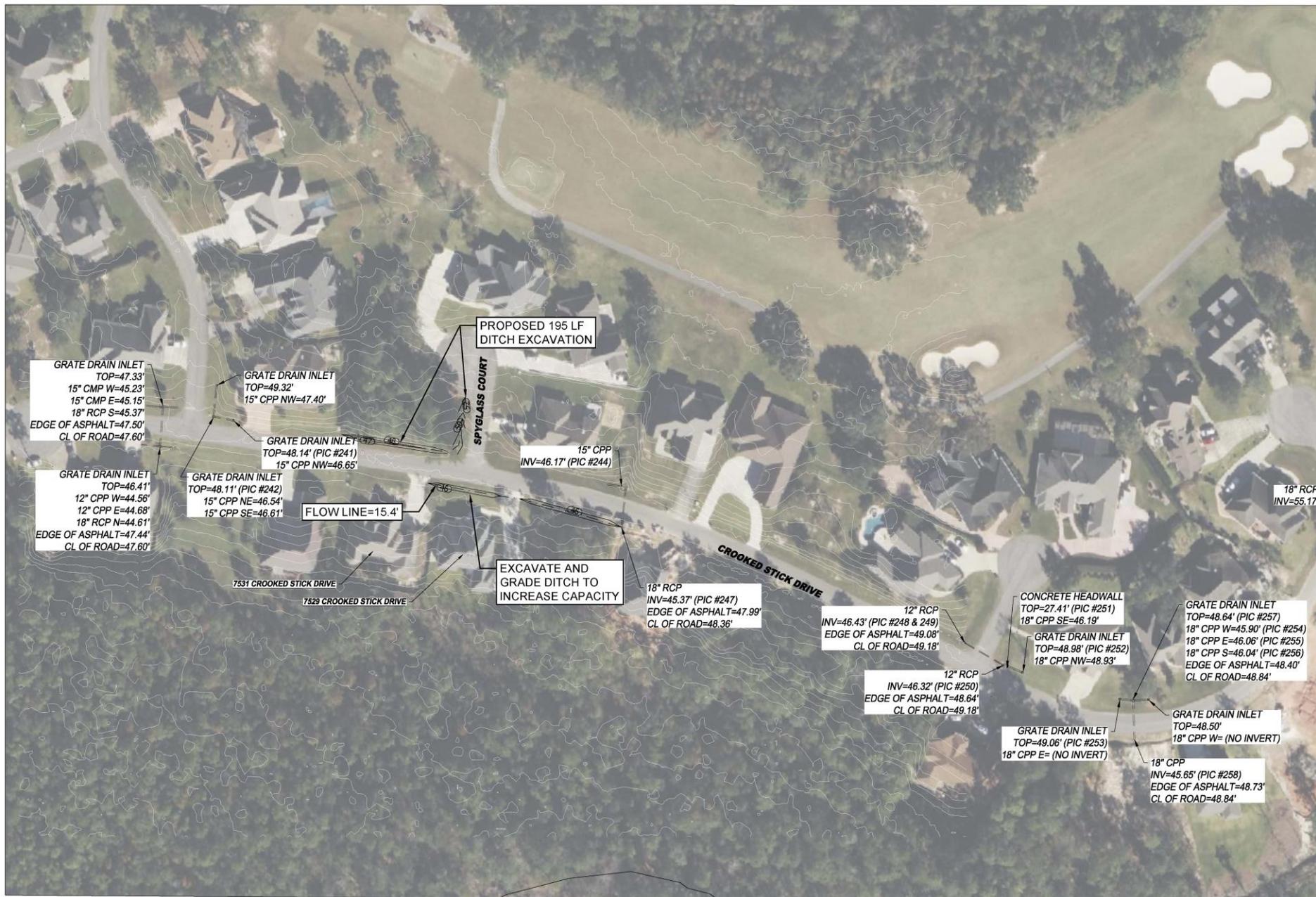
**PUBLIC WORKS PROJECTS
 STORMWATER MASTER PLAN**

CITY OF DIAMONDHEAD

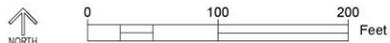
DIAMONDHEAD DR WEST

| | | | |
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| DATE | 3/01/23 | SHEET NUMBER | |
| SCALE | | | |
| DRAWN BY | SM | CHECKED BY | AL |
| PROJECT | 16175 | | |

PW-7



CROOKED STICK DRIVE
 SCALE: 1" = 50'



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PUBLIC WORKS PROJECTS
STORMWATER MASTER PLAN
 CITY OF DIAMONDHEAD

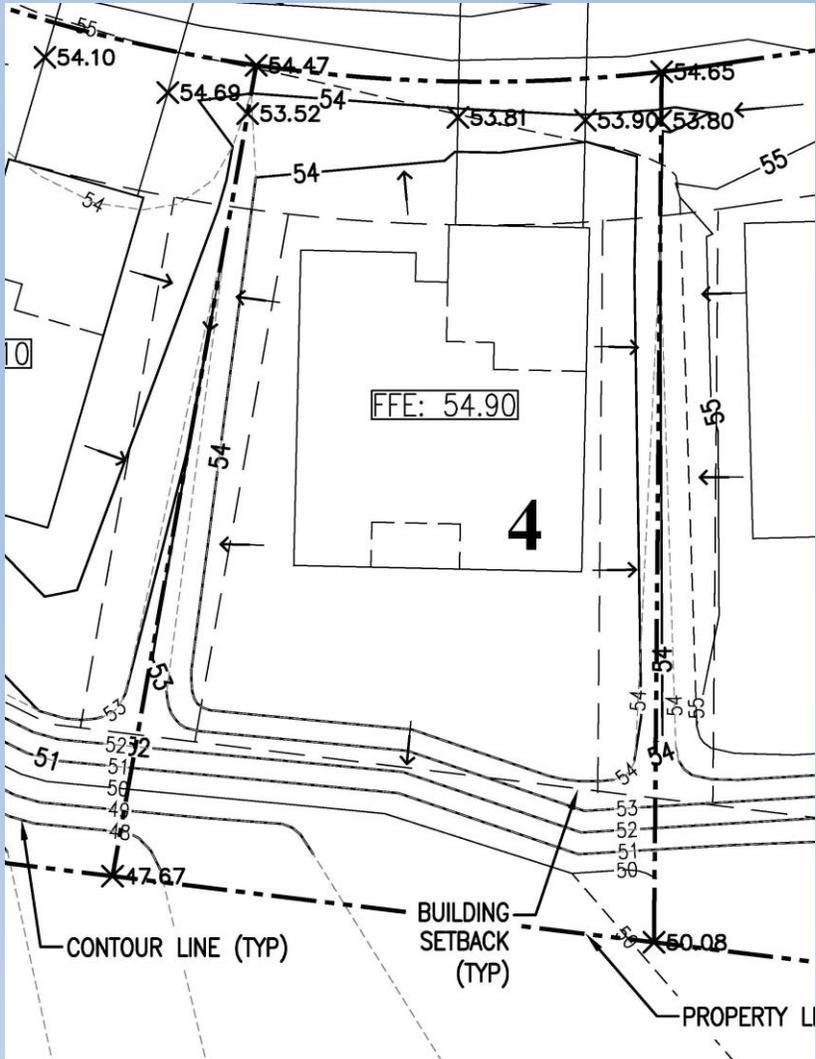
CROOKED STICK DRIVE

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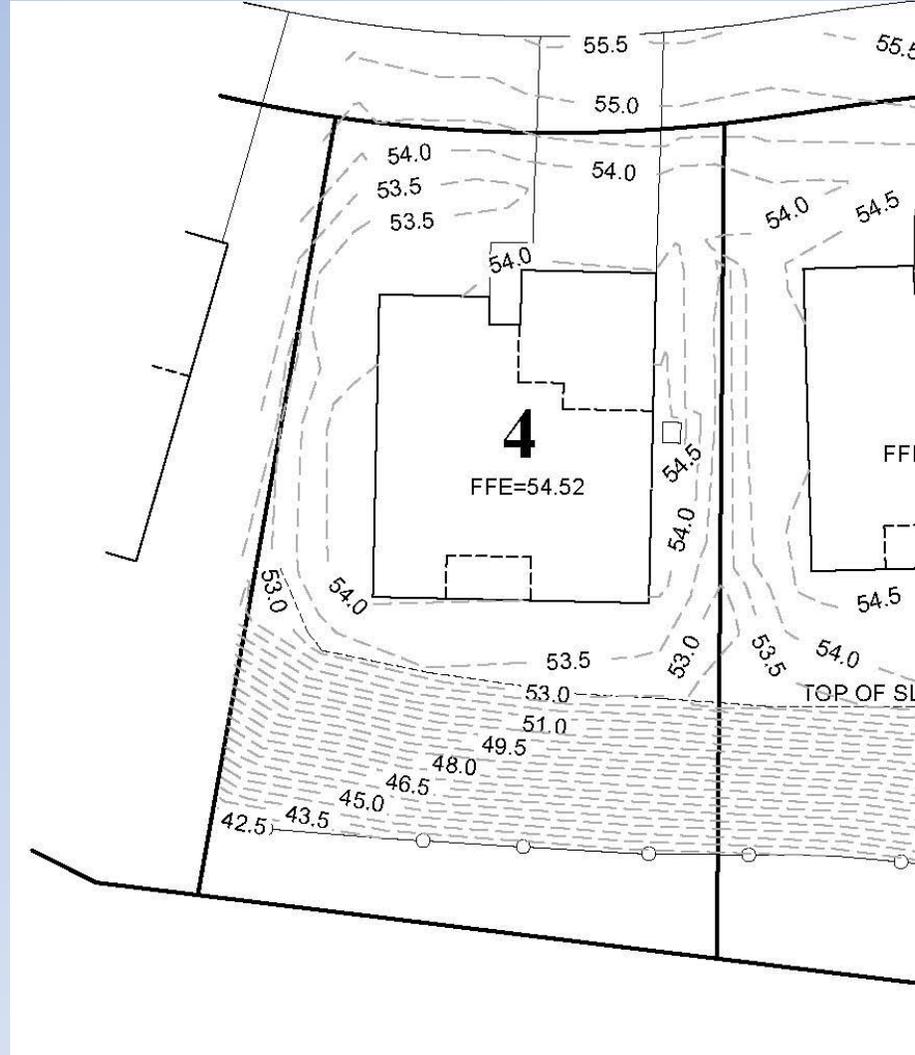
PW-9
 16175

Subdivision Developments

- Design requires addressing intermediate condition of post-subdivision construction and pre-house construction. This is the condition of no obstructions (houses, driveways; etc.) . Under these circumstances, typically runoff is able to form uniformly across the site.
- Once house construction begins, runoff is to be routed around obstructions to ensure positive drainage. Typically, in the form of swales along side property lines between houses. This results in an accumulation of runoff and therefore no longer able to sheet across the roadway.
- Additionally, following subdivision completion and during house construction, the site is monitored for typical site construction issues namely erosion in disturbed areas, settlement in fill areas and performance of the roadway and drainage



LOT PLAN SUBMITTED PRIOR TO CONSTRUCTION



LOT PLAN PROVIDED AFTER CONSTRUCTION